Claims

1. A composition comprising a urethane polymer reversibly bonded to a therapeutically active compound via one or more reactive groups of said polymer.

2. The composition of claim 1, wherein said compound is bonded to said polymer via one or more carboxylic acid, amino, sulfo, and/or hydroxyl groups.

3. The composition of claim 2, wherein at least 25% of the carboxylic acid, amino, sulfo, and/or hydroxyl groups of said polymer are bonded to said compound.

4. The composition of claim 1, wherein said compound is directly bonded to said polymer.

5. The composition of claim 1, wherein said compound is bonded to said polymer through a hydrogen-bond.

6. The composition of claim 1, wherein said compound is bonded to said polymer for at least one day in phosphate-buffered saline at pH 7.4 and at 37°C.

7. The composition of claim 1, wherein said compound is bonded to said polymer for less than ten days in phosphate-buffered saline at pH 7.4 and at 37°C.

8. The composition of claim 1, wherein at said compound is bonded to said polymer or a period between one and ten days, inclusive, in phosphate-buffered

saline at pH 7.4 and at 37°C.

9. The composition of claim 1, wherein said compound comprises a carboxylic acid group or an aryl group.

10. The composition of claim 1, wherein said compound is an antibiotic or an antifungal, antiviral, or antiseptic agent.

11. The composition of claim 10, wherein said antibiotic is a quinolone.

12. The composition of claim 11, wherein said quinolone is selected from the group consisting of ciprofloxacin, ofloxacin, norfloxacin, sparfloxacin, tomafloxacin, enofloxacin, lomefloxacin, pefloxacin, fleroxacin, and DU6859a.

13 A biocompatible device comprising a urethane polymer reversibly bonded to a therapeutically active compound via one or more reactive groups of said polymer.

14. The device of claim 13, wherein said device is selected from the group consisting of a catheters, vascular grafts, artificial hearts, blood filters, pacemaker leads, heart valves, and prosthetic grafts.

15. A wound dressing comprising a urethane polymer reversibly bonded to a therapeutically active compound via one or more reactive groups of said polymer.

16. A method of applying a therapeutically active organic compound to a urethane polymer, said method comprising incubating said polymer with said compound in a solution under conditions that result in reversible bonding of said compound to said polymer via one or more reactive groups of said polymer.

17. The method of claim 16, wherein said method is a dyeing process.

18. The method of claim 16, wherein said solution is an aqueous solution.

19. The method of claim 16, wherein said polymer and said compound are incubated at a temperature between 35 and 90 °C, inclusive.

20. The method of claim 16, wherein said polymer and said compound are incubated for at least one hour.

21. The method of claim 16, wherein the concentration of said compound is at least 0.5 % owf.

22. The method of claim 16, wherein solution has a liquor ratio of at least 10:1.

23. The method of claim 16, wherein said compound is bonded to said polymer via one or more carboxylic acid, amino, sulfo, and/or hydroxyl groups.

24. The method of claim 23, wherein said polymer comprises a carboxylic acid functional group, and wherein said polymer and said compound are incubated

at a pH of greater than 7.5.

25. The method of claim 23, wherein said polymer comprises an amino group, and wherein said polymer and said compound are incubated at a pH of less than 7.5.

26. The method of claim 23, wherein at least 25% of the carboxylic acid, amino, sulfo, or hydroxyl groups of said polymer are bonded to said compound.

27. The composition of claim 16, wherein said compound is directly bonded to said polymer.

28. The method of claim 16, wherein said compound is bonded to said polymer through one or more hydrogen-bonds.

29. The method of claim 16, wherein, after said incubation, said compound remains bonded to said polymer for at least one day in phosphate-buffered saline at pH 7.4 and at 37°C.

30. The method of claim 16, wherein, after said incubation, said compound remains bonded to said polymer for a period between one and ten days in phosphate-buffered saline at pH 7.4 and at 37°C.

31. The method of claim 16, wherein said compound comprises a carboxylic acid group or an aryl group.

32. The method of claim 16, wherein said compound is an antibiotic or an antifungal, antiviral, or antiseptic agent.

33. The method of claim 32, wherein said antibiotic is a quinolone.

34. The method of claim 33, wherein said quinolone is selected from the group consisting of ciprofloxacin, ofloxacin, norfloxacin, sparfloxacin, tomafloxacin, enofloxacin, lomefloxacin, pefloxacin, fleroxacin, and DU6859a.

35. The method of claim 16, wherein, prior to said incubation, said polymer is prepared by reacting a diisocyanate, a polycarbonate-based diol, and a chain extender.

36. The method of claim 35, wherein said diisocyanate is 4,4'-diphenylmethane diisocyanate (MDI).

37. The method of claim 35, wherein said diol is poly(1,6-hexoyl-co-1,2-ethyl-carbonate)diol.

38. The method of claim 35, wherein said chain extender comprises a carboxylic acid group.

39. The method of claim 38, wherein said chain extender is 2,2-bis(hydroxymethyl)propionic acid.

40. The method of claim 35, wherein said chain extender comprises an

amino group.

41. The method of claim 35, wherein said chain extender comprises a sulfo group.

42. The method of claim 35, wherein said chain extender comprises an hydroxyl group.